

CUTTING, DRILLING AND LAYING Large Format Tiles

In the not very distant past, 300x300 mm was considered to be a large tile format. Monocottura (single fired tile) was the industry standard floor tile and tilers could cut the majority of monocottura floor tiles, straight or diagonally, using a conventional score and snap tile cutter.

Times have changed and floor and wall tile formats are becoming larger. 400 mm is fast becoming the norm, while a variety of importers' report that manufacturers are promoting even larger formats. Richard Mackenzie of Ocean + Merchant reports that Italian manufacturer La Provenza, supply various floor tile series in the following sizes - 200x200 mm, 300x300 mm, 200x400 mm, 400x400 mm, 400x600 mm and 600x600 mm.

While 600x600 mm is the largest square format produced by many manufacturers, it is not uncommon to come across 1.2 mtrs. x 600 mm and 500 mm x 1 mtr. floor tiles.

Chinese manufacturers are leading the large format charge.

THE PLOT THICKENS

Not only have tiles become larger, there has also been a change in terms of product type. Monocottura still exists and will probably never go away. However glazed porcelain, fully body porcelain, polished and natural, are now the most popular types of floor tile.

These products are generally denser and harder, however they also have a degree of brittleness that can make them difficult to cut.

Building Diagnostics experts will confirm that one of the most common complaints about finished tiling projects relates to what many in the industry like to call 'chittered edges'.

A certain percentage (possibly quite high) of the nation's 15,000 plus tilers, do not possess the equipment required to cut a 400x400 mm glazed or full body porcelain tile, in a manner that leaves a smooth, clean edge, that is straight and unchittered.

Previous experiments conducted by Tile Today staff with assistance from B.A.T. Trims and Tile Power, confirmed that it is

possible to cut some porcelain products using conventional score and snap tile cutters. However, the number of recorded complaints appears to indicate that the sheer volume and variety of porcelain floor tile finishes and formats, are simply too great for any tiler to handle using conventional tile cutting equipment.

Tiles with chittered or rough, not quite true cut edges, look poor when they are cut to skirtings, plinths or factory produced floor features.

A SIMPLE SOLUTION

If the trend to large, dense floor tiles is set to continue, then tilers who want to maximise their opportunities need to think seriously about investing in adequate state-of-the-art cutting equipment. Many tilers own wet saws which will cut 300 mm products diagonally. The popularity of large format porcelain and natural stone products would appear to suggest that the time is right to upgrade.

In **figures 1 & 2** we see a close up and distance shot of a Nuova Mondial - Manta wet saw which can handle the majority of floor tile products on the market. There are two models available, one with a 65 cm flat bed that will cut a 400x400 mm tile diagonally, the second 85 cm model will cut 600x600 mm tiles diagonally. Both models can cut to a depth of 110 mm.

It is possible to step mitre really thick products using either model. The cutting blade in this instance is a 300 mm blade, which will cut porcelain or stone.

We discovered that we could cut the featured 400 mm porcelain tile in seven seconds. At this pace, even using this equipment the cut edge was slightly chittered. If we slowed the pace of the cut down to 20 seconds, the quality of the cut improves accordingly.

The featured Diarex blade is available in sizes ranging from 10 cms to 35 cms.

By cutting slowly the quality of the cut became razor sharp. However all is not lost when and if chittering occurs.

A SWIFT RUB DOWN

Figure 3 reveals a close up of a rapid cut that left a slightly chittered edge. **Figures**

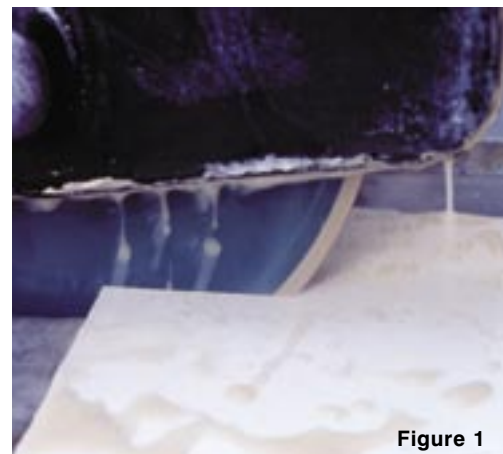


Figure 1



Figure 2

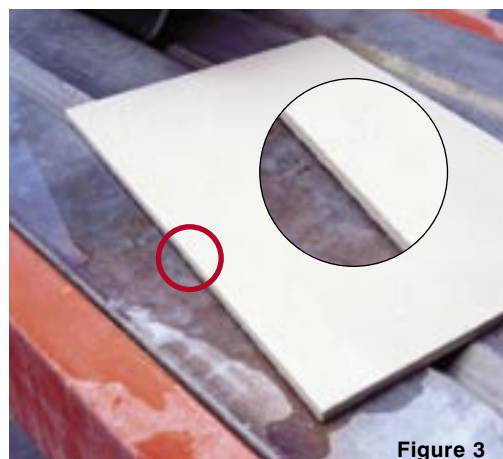


Figure 3



Figure 4

4 & 5 depict use of a Diamond Sanding Block. A swift rub along the rough edge is generally sufficient to produce a neat bevelled, almost rectified edge.

The lesson is cut slowly and save remedial work, but take your sanding block along just in case. These handy sanding blocks are also perfect for reducing the sharpness of in-situ mitres. Course and fine pads are available.

GETTING TO KNOW THE DRILL

From time to time frustrated tilers call and complain that they cannot drill a hole in porcelain. Readers will recall that B.A.T. Trims provided a perfect example of how to drill a hole in porcelain in the last edition. (Tips, Tricks & Tools - page 98.)

Here we reveal (figures 6&7), a smart system that uses a Flex drill and a Diarex Water Containment Ring and drill bit.

To drill a hole in an installed floor tile, or a loose tile, simply wet the water containment ring and stick it to the face of the tile over the intended drill hole. By partly filling the ring with water, the drill bit will remain cool. Drill bits are available from 6 mm to 100 mm.

The drill can also be used to drill holes in in-situ tiles for a range of uses including towel rails, toilet roll holders etc. There are a number of ways that one can get water into the drill hole to cool the blade, which range from simple use of a sponge or squirt bottle, to more complex and expensive water injection systems.

There is no excuse for poor cutting and every porcelain tile can be drilled. As products become larger, more expensive and often require laying with minimal grout joints, the need to cut accurately and smoothly increases.

LAYING TECHNIQUES

When tile layers are confronted with the prospect of laying substantial areas of tile, using any big format product, such as a 400x400 mm or larger module, their eyes usually light up. Lay five or six tiles and you have laid a metre. Sounds simple and in theory it is. We have already determined that it is a relatively simple process to cut, drill and mitre large tiles providing we have the right equipment.

What else can go wrong? Well, a few things actually. Many of the products of the moment look like natural stone and come complete with rectified edges, a process that provides each tile edge with a feint arris. This technological advance

encourages manufacturers to imitate the tight joint spaces commonly associated with marble or travertine.

Obviously the background, floor or wall, needs to be plumb, flat, smooth and true.

The increase in tile size is frequently accompanied by an increase in price. Top quality full body polished porcelain tiles from Italy or Spain can cost \$60 to \$80 per square metre, not as expensive as genuine natural stone, but getting there.

Imported Chinese porcelain can cost half as much. In the end, cost may have no bearing on the appearance of the finished floor from a tiling perspective.

The tiler will still have to provide the home owner or builder with a satisfactorily tiled floor. In circumstances where more expensive product has been selected, the client may look more closely at the finished product. In the final analysis, mistakes made in the laying of a \$39 a metre tile, will be scrutinised as much as those made with more expensive tiles.

It has been established (refer China - Will All The Pieces Of The Puzzle Fit) that production costs of polished porcelain products made in China, are approximately one-third of those manufactured in Italy. The big reduction in cost should not equate to a similar reduction in quality. So what should the cautious retailer or fixer look for when buying or laying large format product.

CHECKS AND BALANCES

Obviously the retailer will be concerned about porosity values and questions relating to sealing, abrasion, shock and slip resistance values are all key factors.

Both the tiler and the retailer need to be aware of the product's planarity value. In other words, are the tiles flat?

Lippage or lipping tiles can be a huge problem, particularly when the tile layer is challenged to lay tiles only 1 or 2 mm apart. If the tiles are flat we are half way there.

Is the floor flat? Will it require a coat of Ardit to make it level? Minor imperfections in the substrate can be overcome in the laying process. Adhesive should be serrated on to the floor using a large notched trowel with rounded edges. The new Australian standard revision AS 3958.1 insists that tilers must achieve 80% contact coverage minimum, with the

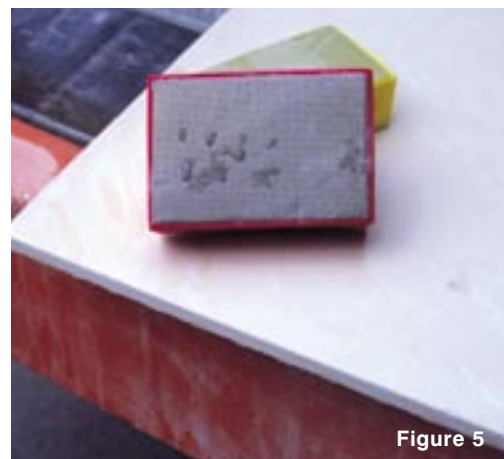


Figure 5



Figure 6



Figure 7

All images courtesy of CDK Stone.

back of the tile. In wet areas this factor rises to 90%.

To achieve these results it will be necessary to serrate adhesive on the floor and skim an even layer on to the back of the tile. Double sticking is a must. Tiles are heavy, so use an adhesive that will not slump.

Laying large format tiles is hard work. To get it right tilers need to charge correctly and take their time. Getting it wrong can be a very expensive hobby. □